

**Final
Site Specific Work Plan
Phase I RCRA Facility Investigation
Atlantic Fleet Weapons Training Facility
Vieques Island, Puerto Rico**



Prepared for
Department of the Navy
Atlantic Division
Naval Facilities Engineering Command

Under the
LANTDIV CLEAN II Program
Contract No. N62470-95-D-6007
CTO-031

Prepared by
CH2MHILL
Tampa, Florida

September 6, 2001

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CTO Task Order 031

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List of Acronyms

AFWTF	Atlantic Fleet Weapons Training Facility
AOC	Area of Concern
ASTM	American Society for Testing and Materials
BLS	Below Land Surface
CLP	Contract Laboratory Procedure
COC	Chain-of-Custody
CTO	Contract Task Order
DQE	Data quality evaluation
DQO	Data quality objectives
EMA	Eastern Maneuver Area
EPA	U.S. Environmental Protection Agency
FSP	Field Sampling Plan
GIS	Geographic Information System
GPS	Global Positioning System
HASP	Health and Safety Plan
IAS	Initial Assessment Study
ID	Identification
IDWMP	Investigation-Derived Waste Management Plan
JIG	Joint Interest Group
LANTDIV	Atlantic Division
LC	Low Concentration
LCSs	Laboratory confirmation samples
MDL	Method detection limit
MS/MSD	Matrix spike/matrix spike duplicate
NASD	Naval Ammunition Support Detachment
Navy	U.S. Navy
NSRR	Naval Station Roosevelt Roads
OP	Observation Post
OVA	Organic Vapor Analyzer
PAOC	Potential Area of Concern
PARCCs	Precision, accuracy, representativeness, comparability, and completeness
PI	Photo-Identified
PREQB	Puerto Rico Environmental Quality Board
QAPP	Quality Assurance Project Plan
RBC	Risk based criterion
RCRA	Resource Conservation and Recovery Act

RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
RL	Reporting limit
SAP	Sampling and Analysis Plan
SOPs	Standard Operating Procedures
SVOC	Semi-Volatile Organic Compound
SWMU	Solid Waste Management Unit
TCLP	Toxicity characteristic leaching procedure
TM	Technical Memorandum
UST	Underground storage tank
VOC	Volatile Organic Compound

SECTION 1

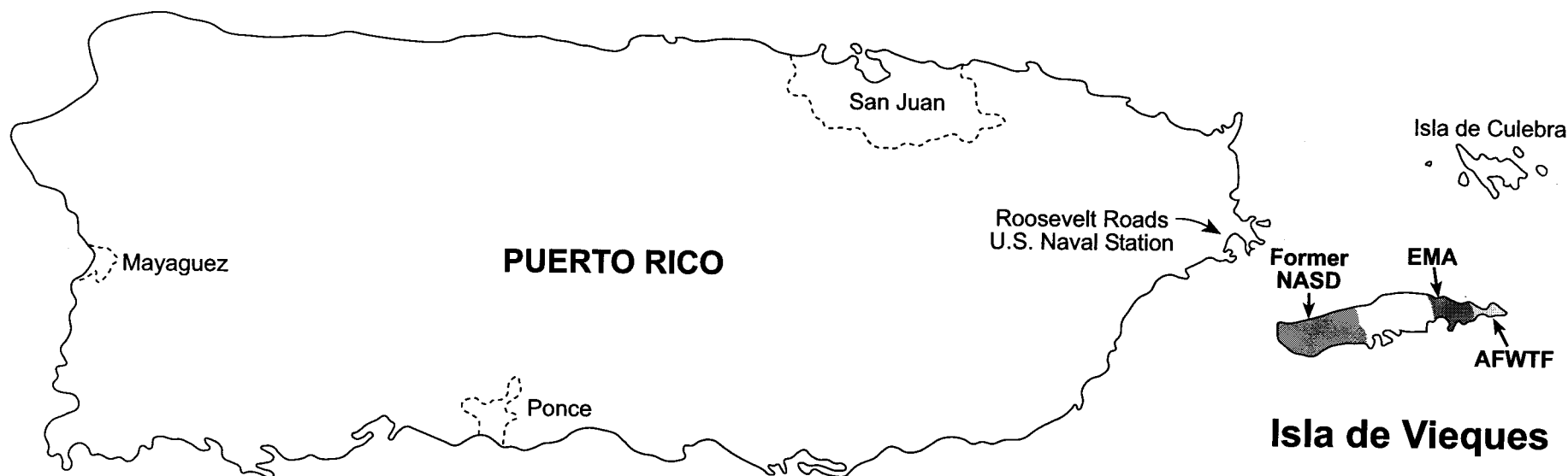
Introduction

This Site-Specific Work Plan for the Phase I Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) was prepared for the U. S. Navy (Navy) Atlantic Fleet Weapons Training Facility (AFWTF) on Vieques Island, Puerto Rico. It was prepared in accordance with Consent Order RCRA-02-99-7301 entered into agreement between the U.S. Environmental Protection Agency (EPA) and the Navy on January 20, 2000, and in response to requirements presented under Contract Task Order (CTO)-031 between the Navy and CH2M HILL. This Work Plan presents the work proposed for the Phase I RFI to be completed at nine Solid Waste Management Units (SWMUs) and three Areas of Concern (AOCs) at the AFWTF located on the eastern end of Vieques Island. Additionally, 12 Potential Areas of Concern (PAOCs) and 23 photo-identified (PI) areas will be investigated as part of the Phase I RFI to determine whether release of hazardous materials has occurred at each site. The nine SWMUs and three AOCs are located on the AFWTF and in the Eastern Maneuver Area (EMA), which is adjacent to and contiguous with the AFWTF. In addition, some of the SWMUs and AOCs are located at Camp Garcia, which is located within the EMA. Figure 1-1 shows the location of Vieques Island. Figure 1-2 shows the location of the AFWTF, EMA, and Camp Garcia on Vieques Island.

A background study for metals is proposed for the AFWTF to establish the concentrations of naturally occurring metals in soil and groundwater. Laboratory analytical results from this effort will establish background criteria for comparison to normal environmental sample data. A work plan for the background study will be developed and submitted as a separate document from this Site-Specific Work Plan, but will be referenced in relation to comparison studies for sampling and analysis rationale at particular SWMU and AOC sites.

Previous investigations of the sites consist of an Initial Assessment Study (IAS) (Greenleaf/Telesca, 1984), a RCRA Facility Assessment (RFA) completed by A.T. Kearney, Inc., on October 13, 1988, and an updated RFA completed by the Puerto Rico Environmental Quality Board (PREQB) on September 27, 1995, identifying 11 SWMUs and eight AOCs. The designations of AOCs and SWMUs have since been updated to include 12 SWMUs and three AOCs. Of these designations, nine SWMUs and three AOCs were included in the EPA Consent Order for the AFWTF investigation, as follows:

- SWMU 1 – Camp Garcia Landfill (Camp Garcia)
- SWMU 2 – Fuels Off-Loading Site (Camp Garcia)
- SWMU 4 – Waste Areas of Building 303 (Camp Garcia)
- SWMU 5 – Spent Battery Accumulation Area (Observation Post (OP)-1, Inner Range, AFWTF)
- SWMU 6 – Waste Oil and Paint Accumulation Area (Seabees Area, Camp Garcia)
- SWMU 7 – Waste Oil Accumulation Area (outside Building 303 at Camp Garcia)



AFWTF - Atlantic Fleet Weapons Training Facility
EMA - Eastern Maneuver Area
NASD - Naval Ammunition Storage Detachment

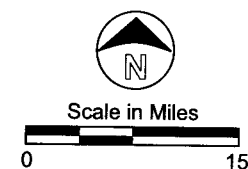


Figure 1-1
SITE LOCATION MAP
 Vieques Island, Puerto Rico

- SWMU 8 – Waste Oil Accumulation Area (OP-1, Inner Range, AFWTF)
- SWMU 10 – Sewage Treatment Lagoons (Camp Garcia)
- SWMU 12 – Solid Waste Collection Unit Area (OP-1, Inner Range, AFWTF -formerly AOC B)
- AOC A – Diesel Fuel Fill Pipe Area (OP-1, Inner Range, AFWTF)
- AOC F – Rock Quarry (Camp Garcia)
- AOC G – Pump Station and Chlorinating Building at Sewage Lagoons (Camp Garcia)

The remaining three SWMUs (SWMUs 3, 9, and 11) not included in the Phase I RFI are located in the active military range area and are excluded from any corrective action requirements at this time under the terms and conditions of EPA Consent Order Docket No. RCRA-02-99-7301.

SECTION 2

Initial Evaluation and Sampling Rationale

This section presents a site summary, previous investigation results (if any), and sampling rationale for the sites (nine SWMUs and three AOCs) included in the Phase I RFI.

Previous studies performed in these areas include an RFA completed by A.T. Kearney, Inc., on October 13, 1988, an updated RFA completed by PREQB on September 27, 1995, and an initial field sampling investigation at five of the sites located at Camp Garcia (SWMU 4, SWMU 6, SWMU 7, SWMU 10, and AOC F) performed by CH2M HILL in June 2000. The purpose of the initial field sampling investigation of the five Camp Garcia sites was to evaluate potential contamination at the sites because they were planned for use by Naval Ammunition Support Detachment (NASD) activities that were in the process of being relocated from the western portion of Vieques to Camp Garcia. No previous investigations at the seven other sites have included environmental sampling.

In addition to these previous studies, CH2M HILL visually inspected the sites in February and June 2000 to assess the current condition of the sites.

2.1 SWMU 1 – Camp Garcia Landfill

2.1.1 Site Summary

According to the RFA, the Camp Garcia Landfill is located in the EMA approximately 4,000 feet north-northwest of Blue Beach, approximately 3,000 feet east of Camp Garcia (PREQB, 1995).

According to the IAS, the landfill was in operation from approximately 1954 to 1978, when it became inactive. When the landfill was operational, it was used for the disposal of waste paper, corrugated containers, cans and food packaging material, rags, scrap metal, and yard waste. Normal trash (food waste, waste paper, etc.) from both Camp Garcia and the Inner Range of the AFWTF was also disposed at the landfill. The landfill was not lined. It serviced approximately 150 individuals, depending on military exercises. One 5-ton dump truck was used every day, 5 days per week, to dispose waste at this site. According to PREQB (1995), approximately 1,800 to 3,120 tons of waste was distributed over the 100 to 200 acre area. An aerial photo analysis of the landfill, however, indicated that the fill area extended over an area of approximately 55 acres (ERI, 2000). When operation of the landfill ceased in 1978, a cap consisting of compacted native soils was installed. Today, the landfill is vegetated with dense grasses. A gravel road was constructed down its center in the mid-1980s. During the 1995 RFA (PREQB, 1995), no signs of erosion or stresses on vegetation were observed in the landfill area, and no documentation was found regarding releases of hazardous constituents from the landfill.

During the February 2000 CH2M HILL site visit, no signs of previous landfill activities were visible at the site. The site was heavily vegetated (see Figure 2-1).